PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference SCB 868 PCT	**FOR FURTHER ACTION**	See Form PCT/IPEA/416
International application No. PCT/EP2004/011236	International filing date *(day/month/year)* 08.10.2004	Priority date *(day/month/year)* 17.10.2003
International Patent Classification (IPC) or national classification and IPC A61K9/16, A61K9/107, A61K31/167, A61K31/07, A61K9/10		
Applicant FIDIA FARMACEUTICI S.P.A. et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 2 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the opinion
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
27.07.2005	22.09.2005
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Venturini, F Telephone No. +49 89 2399-7847

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/011236

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

   Description, Pages

   1-12 as originally filed

   Claims, Numbers

   1-13 received on 28.07.2005 with letter of 27.07.2005

   Drawings, Sheets

   1/6-6/6 as originally filed

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	4-10,12,13
	No:	Claims	1-3,11
Inventive step (IS)	Yes:	Claims	4-10,12,13
	No:	Claims	1-3,11
Industrial applicability (IA)	Yes:	Claims	1-13
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

SECTION V

1. Reference is made to the following document:
   D1: US5023271

2. D1 describes pharmaceutical microemulsions comprising, among other ingredients, Vitamin A and phosphatidylcholine.

   As it is not explicitly mentioned in D1 whether said microemulsions are W/O or O/W, they are *prima facie* considered as novelty-destroying for claims 1-3,11 of the present application unless the applicant provides information to reverse said opinion. Therefore the present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-3,11 is not new in the sense of Article 33(2) PCT.

   Amended claims 1-13 must be construed as meaning a composition suitable for topical use. Although D1 does not describe microemulsions for topical use, microemulsions described therein are in fact in principle also suitable for topical use. Therefore the novelty objection is maintained.

   Since the question of the presence of an inventive step only arises when the subject-matter is new, a more detailed analysis of the compliance of the present application with the requirements of Art 33(3) PCT is postponed until the objection above is overcome.

CLAIMS

1. Topical water-in-oil (W/O) microemulsions containing a retinoid and a phospholipid emulsifier as active ingredient.

2. Topical microemulsions as claimed in claim 1, wherein the phospholipid emulsifier is selected from soy phosphatidylcholine and soy lecithin.

3. Topical microemulsions as claimed in claim 1 or 2, wherein the oily phase consists of alkyl esters of C_{10}-C_{22} fatty acids.

4. Topical microemulsions as claimed in claim 3, wherein the oily phase consists of isopropyl palmitate.

5. Topical microemulsions as claimed in one or more of the preceding claims, wherein the retinoid is selected from isotretinoin (13-cis-retinoic acid), tazarotene and fenretinide.

6. Topical microemulsions as claimed in claim 5, wherein the retinoid is fenretinide.

7. Topical microemulsions as claimed in one or more of the preceding claims, also containing sodium hyaluronate.

8. Topical microemulsions as claimed in one or more of the preceding claims, containing a derivative of hyaluronic acid selected from:

- HA salified with organic and/or inorganic bases with a molecular weight of 50-730 KDa or a high molecular weight (750-1230 KDa);
- esters of HA with alcohols of the aliphatic, araliphatic, cycloaliphatic, aromatic, cyclic and heterocyclic series;
- amides of HA with amines of the aliphatic, araliphatic, cycloaliphatic, aromatic, cyclic and heterocyclic series;
- O-sulphated derivatives of HA up to the 4th degree of sulphation;
- inner esters of HA.

9. Topical microemulsions as claimed in one or more of the preceding claims, also containing antioxidants and preservatives.

10. Topical microemulsions as claimed in claim 9, containing α-tocopherol and parabens.

11. Topical pharmaceutical compositions comprising the microemulsions described in claims 1-10.

12. Use of the microemulsions described in the claims 1-10 for the preparation of medicinal products with chemoprotective activity.

13. A process for the preparation of the microemulsions claimed in claims 1-10, which involves the addition of a solution of phospholipid emulsifier in the oily phase to the retinoid solution in the same oily phase, or the subsequent addition of an aqueous solution, possibly containing hyaluronic acid, salts or derivatives thereof, preservatives, EDTA and other components.